32 3. The physiological monitor of Claim 2, wherein said signal processor is configured to sort said spectral peaks according to one or more rules.

33 4. In a physiological monitor for measuring a pulserate of a living being, said monitor having a detector producing a detector output waveform corresponding to a time-domain plethysmograph waveform, a method comprising:

transforming a time-domain plethysmograph waveform into a spectral domain waveform;

identifying a plurality of spectral peaks in said spectral domain waveform;

classifying said plurality of spectral peaks into a first group comprising one or more spectral peaks corresponding to a fundamental frequency and a second group comprising one or more harmonics of said fundamental frequency; and

34 estimating a pulserate from at least said first group.

5. The method of Claim 4, wherein said plurality of spectral peaks are classified according to ratios.

35 6. The method of Claim 4, wherein said spectral domain waveform comprises a first component corresponding to a first frequency of light passed through a portion of said living being, and a second component corresponding to a second frequency of light passed through a portion of said living being, and wherein said plurality of spectral peaks are classified at least in part according to one or more ratios, said one or more ratios corresponding to ratios of at least one or more portions of said first component with at least one or more portions of said second component.

36 7. The method of Claim 6, wherein said ratios are classified according to one or more rules.

37 8. An apparatus for monitoring physiological parameters of a living organism having a pulserate, said apparatus comprising:

means for producing a time-domain plethysmograph waveform;

means for transforming said time-domain plethysmograph waveform into a spectral domain waveform having a fundamental spectral peak corresponding to said unknown pulserate and one or more ancillary spectral peaks, and classifying said fundamental spectral peak and said ancillary spectral peaks to estimate said pulserate.

9. A physiological monitor for monitoring a living being having a pulserate, said monitor comprising a signal processor configured to:

transform a time-domain plethysmograph dataset into a spectral-domain dataset;

classify spectral lines in said spectral-domain dataset into a group of spectral values corresponding to a fundamental and one or more harmonics of said fundamental; and

estimate a pulserate from said group of spectral values according to one or more rules.

10. A physiological monitor comprising a signal processor configured to:

transform a time-domain plethysmograph dataset into a spectral-domain dataset;

classify spectral lines in said spectral-domain dataset into a group of spectral values corresponding to a first group of one or more spectral lines and at least one second group of spectral lines, said second group of spectral lines comprising at least one harmonic of said first group; and

estimate said pulserate from said first group and at least one of said second group.

11. In a physiological monitor to monitor pulserate, said monitor having a detector responsive to physiological properties related to light passed through a living being, a method comprising:

transforming a first time-domain plethysmograph waveform into a first spectral domain waveform, said first time-domain plethysmograph waveform corresponding to a first frequency of light passed through a living being;

transforming a second time-domain plethysmograph waveform into a second spectral domain waveform, said second time-domain plethysmograph waveform corresponding to a second frequency of light passed through said living being;

classify one or more spectral values obtained from said a ratio of said first spectral domain waveform said second spectral domain waveform into a series of spectral peaks comprising a fundamental peak and at least one harmonics of said fundamental peak; and

estimating said pulserate from said series of spectral peaks.

12. The method of Claim 11, wherein said pulserate is estimated according to a center of mass of at least a portion of said series of spectral peaks.

13. The method of Claim 11, wherein an estimate of said pulserate is associated with a confidence factor.

14. The method of Claim 11, further comprising computing a confidence factor indicating a likelihood that an estimate for the pulsearate represents the actual pulserate of the living being.

15. In a physiological monitor attached to a living organism having a pulserate, said monitor having a detector responsive to physiological properties related to pulserate, a method comprising the steps of:

transforming a time-domain plethysmograph waveform into a spectral domain waveform;

classifying one or more spectral values obtained from said spectral domain waveform; and

using results from a center of mass calculation of at least a portion of said spectral values to estimate said pulserate.

16. A physiological monitor for monitoring comprising a signal processor configured to:

transform a time-domain representation of a plethysmograph waveform into a spectral-domain representation of said plethysmograph waveform;

select a selected portion of said spectral-domain representation based on one or more rules relating to characteristics of spectral lines in said selected portion and one or more harmonics of spectral lines in said selected portion; and

estimate said pulserate from said selected portion of said spectral-domain representation.

17. A physiological monitor comprising a signal processor configured to:

transform a first time-domain representation of a first plethysmograph waveform corresponding to a first optical measurement wavelength into a spectral domain to produce a first spectral-domain representation representing said first plethysmograph waveform and a transform a second time-domain representation of a second plethysmograph waveform corresponding to a second optical measurement wavelength into said spectral domain to

produce a second spectral-domain representation representing said second plethysmograph waveform;

classify spectral data from in said first spectral-domain representation and said second spectral-domain representation at least in part according to a ratio of at least a portion of said first spectral-domain representation and at least a portion of said second spectral-domain representation to identify a series of spectral peaks corresponding to a fundamental and at least one or more harmonics of said fundamental; and

estimate said pulserate from said series of spectral peaks as a function of a center of mass type of calculation of at least a portion of said series of spectral peaks.

18. A physiological monitor comprising a signal processor configured to:

transform a first time-domain representation of a first plethysmograph waveform corresponding to a first optical measurement wavelength into a spectral domain to produce a first spectral-domain representation representing said first plethysmograph waveform and a second time-domain representation of a second plethysmograph waveform corresponding to a second optical measurement wavelength into said spectral domain to produce a second spectral-domain representation representing said second plethysmograph waveform;

classify spectral data from said first spectral-domain representation and said second spectral-domain representation at least in part according to a ratio of at least a portion of said first spectral-domain representation and at least a portion of said second spectral-domain representation to identify a series of spectral peaks corresponding to a fundamental and at least one or more additional spectral peaks at frequencies higher than said fundamental; and

compute an estimate of said pulserate from said series of spectral peaks according to said fundamental and at least one of said one or more additional spectral peaks.

19. The physiological monitor of Claim 18, said signal processor further configured to calculate a confidence factor related to said estimate of said pulserate.

20. The physiological monitor of Claim 18, wherein said series of spectral peaks are classified using one or more rules.

21. The physiological monitor of Claim 18, wherein said series of spectral peaks are classified using one or more rules.